

In re Patent Application of:
MORSE ET AL.
Serial No. **09/988,906**
Filing Date: **11/20/01**

REMARKS

Claims 1, 5-6, 8-11, 13-14, 17-18, 20-24, and 28-32 remain in this application. Claims 2, 3, 4, 7, 12, 16, 19, 25, 26, and 27 have been cancelled. Claim 15 had been previously cancelled. Claims 1, 11, 24 and 29 are currently amended.

Applicants thank the Examiner for the detailed study of the application and prior art. Applicants have amended the claims to place this case in condition for allowance.

Applicants note that the Examiner has again applied U.S. Patent No. 6,386,767 to Naghski to reject claims, but instead has stated that the amended claims are only obvious and not anticipated by Naghski.

Applicants note that Naghski has ridges formed within a housing that aligns ferrules 18 that engage modified V-shaped parallel ribs. The ferrules are formed from two silicon members 18a, 18b that have V-grooves etched therein to hold the fibers in a "sandwiched" configuration between the members 18a, 18b. The two members 18a, 18b include a planar surface, but have beveled edges to form V-shaped grooves 23 that slidably engage ridges 17 to position the ferrules 18 within a connector. This is clearly shown in FIG. 2 of Naghski.

The present claimed invention is a much different structure and is formed as a single substrate with a substantially planar top reference surface formed as an optically flat polished surface. On this top surface are one of the implanted waveguide, deposited silica waveguide and precision grooves. A substantially planar, single optically flat polished side reference surface is formed substantially

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is received over the top reference surface at either end of the substrate and includes substrate alignment fiducials for aligning the top and side reference surfaces of the substrate relative to the carrier bracket. The substrate carrier receives the substrate and carrier bracket and has carrier alignment fiducials for aligning the side reference surface and top reference surface of the substrate relative to the substrate carrier and carrier bracket for interfacing waveguide devices.

Nowhere does Naghski disclose or suggest the use of a single substrate. Naghski uses a more common arrangement where two silicon members sandwich between each other fibers using a glued adhesive, for example, epoxy. Also, Naghski uses a more standard slidable groove, i.e., a V-shaped groove formed by tapered surfaces of each member 18a, 18b that meet together as shown in FIG. 2 of Naghski.

The present claimed invention, on the other hand, is opposite and includes a single substrate and two optically flat polished reference surfaces that are formed substantially orthogonal to each other, thus, teaching opposite from a groove arrangement as in Naghski. In the present invention, pins would engage the reference surfaces and are operative with the carrier bracket and substrate carrier.

As to the contention that some of the language is not disclosed in the specification, Applicants note that page 7 at paragraph 24 specifically recites that the substrate 12 "has opposing ends 14 similarly formed to each other, a top reference surface 16 and a single side reference surface 18 that is orthogonal to the top reference surface, as illustrated. In a preferred aspect of the invention, only one

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side reference surface 18 is formed, saving manufacturing costs because only two, high precision reference surfaces are formed, while other surfaces, i.e., the other side, bottom and end surfaces, can be formed as lower tolerance surfaces." This part of the specification clearly teaches that a single side reference surface is preferred.

At paragraph 26, the side reference surface can be defined by first placing a mask on top of the polished substrate at the top surface and some type of alignment marks with fiduciaries formed by the mask. Any technician creating the substrate could grind off or polish back that mark or fiduciary to create a precision side reference surface. Thus, there is support in the claim for defining the substantially planar single side reference surface as an optically flat polished surface.

Paragraph 24, of course, defines that the side reference surface is orthogonal to the top reference surface. Because there is no "sandwich" configuration as taught by Naghski, only a single substrate is required to hold the waveguide or optical fibers as shown in the drawings and described.

Also, the claims have been amended to delete the recitation regarding the semiconductor masking. Other claims have been cancelled, which are directed to some subject matter that is recited in independent claims or directed to the semiconductor masking.

Applicants contend that the present case is in condition for allowance and respectfully request that the Examiner issue a Notice of Allowance and Issue Fee Due. If the Examiner has any questions or suggestions for placing this

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case in condition for allowance, the undersigned attorney would appreciate a telephone call.

Respectfully submitted,



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